PATENT
Reply under 37 CFR 1.116
EXPEDITED PROCEDURE
Group 1731

REMARKS

Claims 1-24 are pending in this application. Claims 1-24 are rejected.

Responsive to the rejection of claims 1-24 under 35 U.S.C. § 103(a) as being obvious by European Patent No. 0 627 523 (Heikki et al.) in view of U.S. Patent No. 5,389,206 (Buck et al.), or in view of U.S. Patent No. 5,225,043 (Braun et al.) or U.S. Patent No. 5,129,988 (Farrington, Jr.), Applicants respectfully traverse these grounds for rejection and submit that claims 1-24 are now in condition for allowance.

Heikki et al. '523 disclose a former (Fig. 1) including a loop of covering wire 10 and a loop of carrying wire 20 (page 3, line 48). Between the lines B-C, wires 10 and 20 form a twin-wire zone, in which water is removed from web W through both of wires 10, 20 (page 3, lines 48-50). Forming gap G, which becomes narrower as wedge-shaped, is definged between covering wire 10, which is guided by forming roll 11 or corresponding breast roll 11A, and carrying wire 20, which is guided by forming roll 21 or the corresponding breast roll 21A (page 3, lines 51-53). Forming gap G is determined by first open-faced 11';21' forming roll 11;21 and by the smooth-faced 11";21" breast roll 11A;21A. (page 3, lines 56-57). Thus, what is concerned is a so-called "kissing forming roll" (page 4, line 6). Twin-wire zone, after forming gap G, there is a curved forming show 12;22, which has a ribbed deck 12a;22a with a large curve radius R1 (page 4, lines 10-11). Dewatering unit 40 and a press and support unit 60 operating one opposite to the other, wires 10,20 being pressed against one another by way of the latter unit so as to remove water out of web W placed between the wires (page 4, lines 12-14). MB unit 50 or units is/are followed by suction box 29, which is provided with a ribbed deck and which is placed inside the loop of carrying wire 20 (page 4, lines 17-18). Suction box 29 is followed by a large-diameter D2 second forming roll 23, which is placed inside carrying wire 20, which is a suction roll, and in which

there are two successive suction zones 23a and 23b, according to Figs. 1 to 4, and one suction zone 23a, according to Fig. 5 (page 4, lines 18-21). Diameters D1 of rolls 11 and 21A are preferably substantially equal in comparison with one another, being of an order of D1 » 0.5...1.5 m, preferably D1 » 0.7...1.0 m (page 4, lines 35-36). Unit 60 includes a set of ribs 70, which consists of ceramic loading ribs 71,72, which are interconnected pairs by means of support structures 73 (page 5, lines 49-50). Ribs 71,72 and also their back-up ribs 81, extend in the transverse direction across the entire width of web W and of wires 10,20 (page 5, lines 50-51). The set of ribs 70 is loaded by way of pressures pk passed into loading hoses 75 against the stationary frame constructions 74 (page 5, lines 51-52). The consistencies, i.e. dry solids contents of the web that is being formed, which are indicated in Fig. 3, are preferably as follows: consistency in the headbox » 0.5...1.7% (page 6, lines 23-25).

Buck et al. '206 disclose twin-wire former (Fig. 1) with endless wire belts (lower wire 11 and upper wire 12) which travel in the direct vicinity of headbox 10 over breast rolls 13 and 14 respectively, so that the two wire belts together form a wedge-shaped entry slot 15 at the start of the twin-wire zone (column 4, lines 4-10). Stationary curved forming shoe 16 immediately follows breast rolls 13 and 14 (column 4, lines 15-21 and Fig. 1). At least three strips 28 of preferably parallelogram cross section rest against the upper side of the upper wire 12 opposite lower strips 27, all in central section II (column 4, lines 38-51). The embodiment of Fig. 2 shows forming roll 40 instead of forming shoe 16 (column 5, lines 41-43). No vacuum chambers are required in particular in the central section II of the twin-wire zone (column 6, lines 20-23)

Braun et al. '043 disclose forming roller 10 (Fig. 1) which is constructed as a so-called open forming roller (column 3, lines 24-26). Chambers are formed in the periphery of roller 10 (column 3, line 26). A lower screen 12 is driven over this forming roller to a pulp suspension

charging gap 14, which is formed by the convergence of lower screen 12, forming roller 10, and upper screen 18, which is driven by deflection roller 16 (column 3, lines 27-31). Both screens 12 and 18 converge at a position D and thereafter form a twin screen, position D shall be termed "start" of the twin screen as used herein (column 3, lines 31-34). A pulp suspension charging nozzle 20 is positioned upstream of charging gap 14 (column 3, lines 34-35). In the illustrated embodiment, the twin screen overlays the circumference of the upstream half of the forming roller 10 through an angle α of between 5° and 120° (column 3, lines 36-38). Lower screen 12, which carries the fibre layer, diverges from rear forming roller 5 at position E (column 3, lines 44-45). The area between positions D and E is termed a forming zone (column 3, lines 46-47). Two forming shoes 22 and 22' are located below lower screen 12 (column 3, lines 47-48). These forming shoes have evenly spaced lands 24 for supporting the lower screen (column 3, lines 48-49).

Farrington, Jr. '988 discloses a headbox (Fig. 3) including upper headbox wall 10, lower headbox wall 12, and extended dividers 15, 16, and 17 (column 4, lines 9-12). Flexible headbox lip extensions 31 and 32 are coterminous with the headbox dividers (column 4, lines 12-14). The headbox lip extensions can be attached to the headbox by any suitable elements, but in the embodiment shown they abut the headbox lips and are supported by an upper support 33 and a lower support 34 (column 4, lines 14-18). This embodiment has versatility for use in retrofitting existing headboxes, and its thinner profile, which enables placement of the headbox closer to the forming zone (column 4, lines 18-24).

In contrast, claim 1, as previously amended, recites in part: "a forming suction box located immediately following said rotating forming roll, with respect to said direction of travel S; a plurality of forming strips located opposite said forming suction box . . .". (Emphasis added.)

Applicants submit that such an invention is neither taught, disclosed nor suggested by Heikki et al. '523, Buck et al. '206, Braun et al. '043 and Farrington, Jr. '988 or any of the other cited references, alone or in combination, and has distinct advantages thereover.

Heikki '523 discloses a former including a loop of covering wire and a loop of carrying wire 20 forming a twin-wire zone, a forming gap determined by a first open-faced forming roll and by a smooth-faced breast roll (a so-called "kissing forming roll") wherein the diameter of the forming rolls are on the order of » 0.5...1.5 m, a dewatering unit and a press and support unit operating one opposite to the other in the twin wire zone and followed by a suction box, the suction box is followed by a large-diameter suction roll, and a consistency in the headbox » 0.5...1.7%. Buck et al. '206 disclose a forming roll following a headbox with strips following the forming roll in a central section that does not require vacuum. Braun et al. '043 disclose a twin wire former including a forming roller which is constructed as a so-called open forming roller wherein the twin screen overlays the circumference of the upstream half of the forming roller through an angle α of between 5° and 120°. Farrington, Jr. '988 discloses a headbox including extended dividers and flexible headbox lip extensions. The Examiner alleges at page 3 in the present Office Action that Buck et al. '206, and in particular the embodiment of Fig. 2, disclose a suction box immediately downstream of the forming roll. However, the **Buck et al. '206 reference shows central section II immediately downstream of the forming roll** and specifically states that **no vacuum chambers are required in the central section II of the twin-wire zone**. To establish a *Prima Facie* case of obviousness all of the claim limitations must be taught or suggested (MPEP 2143.03) which the cited references fail to accomplish. Further, there must be a suggestion or motivation to modify the references (MPEP 2143.01) which the cited references also fail to accomplish. Contrarily to the present invention, the **Buck et al. '206**

reference shows central section II immediately downstream of the forming roll and specifically states that **no vacuum chambers are required in the central section II**. In further contrast to the Examiner's argument at page 4 of the present Office Action, Heikki et al. '523 disclose a **forming shoe immediately following the forming roll.** Heikki et al. '523, Buck et al. '206, Braun et al. '043 and Farrington, Jr. '988, or any other cited references, alone or in combination, fail to disclose or suggest a forming suction box located immediately following the rotating forming roll, with respect to said direction of travel S; and a plurality of forming strips located opposite the forming suction box.

An advantage of the present invention is an increase in the dewatering capacity of the twin wire former while maintaining good web qualities.

For all of the foregoing reasons, Applicants submit that claim 1, and claims 2-24 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

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Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence has been sent via facsimile on: October 14, 2003.

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